Friction Products &
Power Transmissions
For Industry
Midwest Brake® was founded in 1950 to provide the rapid reline of clutch and brake assemblies to the metal forming industry.

Since that time, Midwest Brake® has become the leading industrial brake bonding facility in North America. This commitment to excellence in manufacturing has led to our world class clutch/brake design and the manufacturing of industrial friction material.

Midwest Brake®, located in Warren, MI, USA is the finest manufacturing facility of its kind in the world today. Customers from all over the world have visited our facility to discover our unique abilities and manufacturing techniques.

**Midwest Brake® – Company History**

- **1950:** Midwest Brake® Founded
- **1957:** Introduced B&R (Black & Red) Friction Material
- **1962:** Installed First Oil Shear Press Drive Conversion
- **1968:** Installed First Oil Shear Press Drive Conversion
- **1972:** Commission of 120,000 Square Foot Manufacturing Facility
- **1986:** Midwest Brake® Material Innovation
# MIDWEST BRAKE® PRODUCT LINE
**DEDICATED TO EXCELLENCE FOR OVER 50 YEARS**

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**Press Pac® Oil Shear Press Drives**
Pages 17-28

**Demag™ Microspeed Drives**
Page 36
Friction Material Manufacturing

Midwest Brake® is an industry leader in developing and manufacturing friction material for industrial applications. Midwest Brake services both original equipment manufacturers and aftermarket customers.

- Major OEM Supplier
- Prototype Parts
- Small & Large Quantities
- Engineering & Design Capabilities
- Tooling & Mold Manufacturing

Friction Material Compounding

With over 30 different standard formulations, Midwest Brake® can provide a variety of frictions to meet your torque, size and temperature requirements. We utilize a dry mix, compression molded process that produces consistent high quality parts.

- Kevlar® Material Available

Industrial Friction Products

- Flat Sheets
- Gear Tooth Facings
- Integrally Molded Parts
- Bonded Parts
- Flexible Molded Rolls
- Flexible Woven Rolls

Large Stock of Industrial Friction Material

Midwest Brake® stocks a wide variety of on non asbestos, industrial friction material.

Flat Sheets
We offer a variety of 30" x 30" flat sheets varying thickness from 1/8" to 3".

Flexible Woven Rolls
Flexible woven material supplied in rolls or segments 13" width from 1/8" up to 3/4" thickness.

Flexible Molded Rolls
Flexible molded material supplied in rolls or segments 13" width from 1/8" up to 1/2" thickness.

KEVLAR® is a trademark or registered trademark of E.I. du Pont de Nemours and Company
Friction Blocks & Bonded Assemblies

Midwest Brake® manufactures complete bonded assemblies. If your part requires multiple processes to finish complete, we can provide your part finished to reduce costs.

- OEM Parts – Finished Assemblies
- Clutch & Brake Plates
- Integrally Molded Parts
- Fabrication & Machined Parts

Processes available are bonding, integrally molding, machining, heat treat, stress relieve, gear cutting, laser cutting, inspection and testing.

Bonded Brake Band Assemblies

We can manufacture brake bands complete to your specifications, prints or samples. We work with cast iron, ductile iron, rolled steel, and welded assemblies.

- OEM Supplier – New Brake Bands
- Finished Assemblies
- Fabrications Or Cast Iron

Processes can include machining, welding and stress relieving. Whether your band is a one piece rolled steel, steel weldament or cast iron, Midwest Brake can fabricate the entire band, including clevis and pin arrangement.

Additionally, we will inspect and qualify the part to your specifications. We provide timely deliveries and will help you reduce your overall part cost.

Bonded Crane Shoes
Industrial Bonding Services

Midwest Brake® is the premier industrial brake bonding company in North America. With over 50 years of experience with thermal adhesive bonding technology, Midwest Brake® provides the highest quality, most reliable brake bond available in the industry.

Our equipment incorporates state of the art controls into the process. We use a resin based thermal adhesive that assures high impact resistance and tensile strength that will perform under the most stringent conditions.

- Superior Bonding Technology
- High Quality Parts & Service
- Quick Turnaround
- Machining Services

Bonded Clutch Plate Assemblies

Midwest Brake® is a valued supplier to OEM customers who require high quality bonded clutch plate assemblies. Clutch plates are manufactured complete to print or sample. Whether you require one part or one thousand parts, Midwest Brake® can meet your requirements.

- OEM Supplier of Bonded Clutch Plates
- Machining, Bonding & Assembly
- High Quality Parts
- Inspection

Midwest Brake® offers machining, bonding, assembly and inspection services all in house.

Black & Red

Black & Red, commonly known as “B & R” in the industry, is different from most friction materials on the market today. The combination of “B & R” material fights surface deterioration and creates a consistent friction for the life of the plate.

The Black Material is formulated for superior wear resistance. Our Red Material is compounded with special resins and additives that allow the friction material to perform at a constant Coefficient Of Friction (COF) throughout the life of the clutch plate. The Red material acts as a scrubber block which cleans the wear surface when used in combination with our Black Material.

Most industrial brake linings use a single component material where high wear, glazing of the mating surface and heat are often characteristics of normal use. Dirt, grease, oil and other common contaminants in the operational environment contribute to accelerated surface deterioration by inhibiting the capability of the friction material to dissipate heat.

Midwest Brake® B & R friction technology fights friction surface deterioration, glazing and premature wear.
Custom Bonded Assemblies

1. Inspection of Used Part
Wear on all surfaces and gear teeth are checked and inspected. Parts are checked for cracks and structural integrity of part.

2. Removal of Old Lining
State of the art industrial debonding ovens are utilized to burn off used linings, adhesives, grease and oil. Fast and safe, your part is ready to be cleaned and prepared for bonding.

3. Cleaning & Surface Preparation
Cleaning the surface of your part, which is one of the most important steps to achieving a high quality bond, is accomplished through mechanically abrading and degreasing the surface.

4. Bond New Lining
New friction material is coated with a thermal adhesive. Proper cycle time, pressure and temperature is applied to complete the bonding process. Midwest Brake® utilizes state of the art bonding presses and equipment to monitor this process, which produces a high quality, consistent bond.

5. Inspection & Documentation
A strict quality control process is followed where every step is documented and checked during the processing of your part. Parts are given a final inspection, stamped, labeled and carefully packaged for shipping.
WORLD CLASS BONDING SERVICES
PLATES, BANDS, SHOES & CUSTOM PRODUCTS

Bonding Technology

Thermal Adhesive Technology
Midwest Brake® utilizes state of the art, thermal adhesive bonding technology. The highest quality adhesives are used to provide the strongest bond strength.

Automated Bonding Press Technology
State of the art bonding ovens and platen presses provide a quality bond that is consistent every time.

Computer Controlled Automation
All aspects of the bonding process are monitored and recorded by a computer controlled interface that records the cycle time, temperature and pressure during the bonding cycle. By insureing that the adhesive is properly cured and set, we set the standard in the industry for quality and reliability.

Capacity
Our equipment is state of the art and provides the ability to bond clutch plates up to 114” in diameter. With over 15 state of the art presses and ovens, Midwest Brake can accommodate all sizes of clutch plates and brake bands quickly and easily.

Quality
Only the highest quality industrial bonding adhesives and friction materials are used in our bonding process.

Consistency
Our quality control assures that the bond and friction material are manufactured to precise specifications 100% of the time. Lot numbers and batch numbers are stamped on the parts and recorded in the paperwork as part of our quality check and provide additional assurance that every part that is approved and meets specifications.
**Bonding Versus Riveting**

Bonding is more effective than riveting as a means of fastening friction material to an opposing mating surface. Bonding produces a higher tensile strength, reduces the chance of a lining failure and increases the uptime and reliability of your machinery.

- **Superior Structural Integrity**
- **Bonding Produces Higher Quality Parts**
- **Increased Friction Material Life**
- **Lower Life Cycle Costs**

**Bonding**
- Thermal adhesive contacts 100% of the plate surface.
- Structural fibers in the friction material remain intact.
- Thermal adhesive provides 100% surface contact on mating surface.
- Longer friction material surface life and no possibility of metal to metal contact.
- Clutch plate and brake band surface remain structurally sound.

**Riveting**
- Riveted lining is attached only with the rivet and is thus a weak link.
- Drilled holes through the lining weaken the structural integrity of the lining.
- Riveted holes are counter sunk thus reduced surface area of friction material.
- Friction material exposes rivet head and leads to exposed rivets which can core or gouge.
- Multiple drilled holes in metal surface structurally weaken the integrity of the clutch plate of brake band.
Friction Product Features:

- Clutch Discs Manufactured New
- Brake Bands Manufactured New
- Premium and OEM Friction Blocks & Lining
- Rapid Reline of All Types of Clutch Discs & Brake Bands
- Bonding Capabilities of Up to 146” in Diameter
- Friction Materials – Standard, OEM & Premium Grade
- Full Machining Capabilities up to 146” in Diameter
- Most Standard Parts Available from Stock

Bonded Lining Features:

- No Drilling or Counter-Sinking
- No Rivet Holes to Align
- Eliminate Gouging and Scoring of Wear Plate
- Quicker Turn-Around Time
- Lower Life Cycle Cost
Friction Products For Clutches & Brakes

We Stock Parts For The Following*:

- Aida – Friction Blocks
- Ambi/Ompi – Clutch/Brake Plates
- Bliss – Clutch/Brake Plates
- Cincinnati – Brake Bands & Brake Shoes
- Clearing – Clutch/Brake Plates, Friction Blocks & Aluminum Slugs
- Cleveland – Brake Shoes
- Danly – Friction Blocks
- Desch – Clutch/Brake Plates
- Eaton Airflex – Clutch Plates
- Erfurt – Friction Blocks
- Flywheel Blocks & Brake Shoes
- Federal Press – Clutch/Brake Plates
- Hamilton – Friction Blocks
- Heim – Clutch/Brake Plates
- Hitachi Zosen – Clutch/Brake Plates & Friction Blocks
- IHI – Clutch/Brake Plates & Friction Blocks
- Industrial Clutch – Clutch/Brake Plates & Gear Tooth Facings
- Komatsu – Friction Blocks
- Muller Weingarten – Clutch/Brake Plates & Friction Blocks
- Niagara – Clutch/Brake Plates & Gear Tooth Facings
- Ortlinghaus – Clutch/Brake Plates & Friction Blocks
- Ravne – Friction Blocks
- Rouselle – Clutch/Brake Plates
- Schuler – Friction Blocks
- Stamco – Clutch/Brake Plates
- Twin Disc – Gear Tooth Facings
- Verson – Clutch/Brake Plates & Gear Tooth Facings
- Warco – Gear Tooth Facings

* The listed trademarks are registered or unregistered trademarks of their respective owners. Clearing, Bliss and Komatsu are registered trademarks of Bliss Clearing Niagara, Inc. Midwest Brake is a registered trademark of Midwest Brake Corporation.
Friction Products & Bonding Services For Forging Presses*

- Ajax – Clutch Plates & Brake Bands
- Erie – Clutch Plates & Brake Bands
- National – Clutch Plates & Brake Bands
- Eumoco – Friction Blocks
- Siempelkamp – Friction Blocks
- ALL Manufacturers Of Forging Presses

Friction Blocks

- Siempelkamp* – Friction Blocks
- Eumoco* – Friction Blocks

Brake Bands

- Erie 3-Piece Brake Band
- Ajax* 2000 Ton Brake Band 8" x 98"

Forging Press Applications

*The listed trademarks are registered or unregistered trademarks of their respective owners. Midwest Brake is a registered trademark of Midwest Brake Corporation.
Industry Leader In Bonding
Large Diameter Forging Plates

- Over 50 Years Experience
- Highest Quality In Industry
- Technology Leader

Bonding Capacity Up To 114" In Diameter
Quick Turn Around On Large Parts

Clutch Plates

National* – Clutch & Brake Plate
Ajax* – Clutch & Brake Plate
Ajax* – Clutch & Brake Plate

*MIDWEST BRAKE is a registered trademark of MIDWEST BRAKE CORPORATION.

THE REFERENCED TRADEMARKS ARE REGISTERED OR UNREGISTERED TRADEMARKS OF THEIR RESPECTIVE OWNERS.
Diaphragms

Diaphragms are used as an air bladder to lock the air between chambers in a clutch or brake to actuate the clutch and brake.

Each manufacturer has their own mounting hole pattern and dimensions. Midwest Brake® has standard diaphragms available or we can cut to size based on a sample (new or used) or from a customer supplied drawing of the diaphragm.

Our diaphragms are much stronger than that of OEM supplied diaphragms. The 2 ply neoprene material has a burst strength of 3000 PSI that will extend the life of the diaphragm and lower downtime and life cycle costs.

Diaphragms Available for the Following Presses*

• Clearing
• Danly
• Hamilton
• Minster
• Schuler
• ALL Flat Stock Types Manufactured
• 2-Ply Burst Strength = 3000 PSI

Flywheel Brakes

Flywheel brakes are used to stop the flywheel from turning when a clutch has been disengaged and the motor is shutdown.

Flywheel brakes are required for presses due to safety regulations. Midwest Brake® supplies several standard models along with our own designs.

We Carry the Following Flywheel Brakes*

• Dynamatic
• Komatsu
• Midwest Brake® – 7313
• Midwest Brake® – 7314
• Midwest Brake® – 7315

* The listed trademarks are registered or unregistered trademarks of their respective owners. Clearing, Bliss and Niagara are registered trademarks of Bliss Clearing Niagara, Inc. Midwest Brake is a registered trademark of Midwest Brake Corporation.
Hydraulic Caliper Brake

The Midwest Brake® Model 9361 Caliper Brake is a hydraulic released, spring set brake. The 9361 disc brake system consists of a brake and oil system.

Hydraulic Caliper Features:

- Reduced Lining Wear
- No Coil Failure Due to Improper Gap Setting
- No Excessive Heat
- No Damage to Rotor Disc
- Minimal Maintenance

Hydraulic Caliper Applications:

- Material Handling Equipment
- Winches
- Cranes & Hoists
- Conveyors
- Machine Tools
Press Pac® Drives:
The original Press Pac® press drives were introduced in 1968. Superior performance and ease of installation made the Press Pac® the preferred press drive for the metal forming industry, automotive stamping and contract stamping facilities worldwide.

Press Pac® Applications:
• Stamping Presses
• Forging Presses
• Press Brakes
• N.C. Turret Punch Press
• Metal Forming Equipment

Press Pac® Features:
• Increased Productivity
• Increased Reliability
• Reduced Life Cycle Costs
• Simple Installation
• Minimal Maintenance

Midwest Brake® Press Drive Engineering
The Midwest Brake® Press Pac® series is the benchmark press drive. These units are engineered for high cycling mechanical presses and deliver the high-torque capacity the metal forming industry demands from a press drive system.

The Midwest Brake® Press Pac® is the clutch/brake of choice for quality, reliability and performance among press manufacturers and stamping plants worldwide. Our proven technology and complete line of clutch/brakes, torque ranges and mounting configurations make Midwest Brake® the clear choice when selecting a supplier of press drive systems.

Midwest Brake® Oil Shear Press Drive History
1962 1st Retrofit of a Stamping Press with an Oil Shear Press Drive
1968 Press Pac® 1600 Series – Commercial Introduction Oil Shear Press Drive Pneumatically Actuated/Oil Cooled
1986 Press Pac® 2000 – Field Test Oil Shear Press Drive Hydraulically Actuated/Oil Cooled
1991 Press Pac® 2100 Series – Commercial Introduction Oil Shear Press Drive Hydraulically Actuated/Oil Cooled
1994 500th Stamping Press – Retrofit
1997 Press Pac® 3200 Series – Commercial Introduction Oil Shear Clutch/Brake – OEM Design Hydraulically Actuated/Oil Cooled
2002 Over 4000 Stamping Press & Welding Press Drives Successfully Installed Worldwide
Midwest Brake® Offers:

- Conversion Packages
- Complete Drive System Engineering
- Hydraulic & Pneumatic Actuation Packages
- Controls Package
- Turn Key Installation Services
- Field Service Inspection
- Factory Certified Rebuild
- Parts

Integral Press Drives – 2100 & 1600 Series

Separate Clutch & Brake – 2200 Series

Quill Mount Clutch & Brake – 2102 Series

Multiple Disc Clutch/Brake – 3200 Series
Press Pac® 2100 Series
Integral Mounted Press Drive Systems

Simplified and easily installed, the Press Pac® 2100 series drive system provides all the proven advantages of oil shear operation and does not require any modification of existing press parts. The Press Pac® is an integral part of the press drive itself – not just an add on unit. All components of the existing drive shaft assembly are replaced except the pinion, bearing and bracket on the pinion side.

• High Performance Drive Systems
• Industry Leading Technology
• Maintenance Free

Press Pac® 2100 Series Features:

• Hydraulically Actuated / Oil Cooled
• Higher Single Stroke Capability
  - Increase Single Stroke up to 25% Without Gear Change
• Precise Inching & Jogging
• Reduced Life Cycle Costs
  - Up to 10 Years of High Volume Production
• Low Inertia – Compact Design
• Complete Drive System Engineering
Complete Package Includes The Following New Components:

- Complete Drive System Engineering
- Oil Shear Clutch/Brake
- Clutch/Brake Housing
- Flywheel
- Flywheel Bearings
- Drive Shaft
- Mounting Bracket
- Rotary Union
- Hydraulic Oil Tank
- Midwest Brake® Service Technician Check Out

Press Pac® Conversion Package:

- Minimal Modification to Existing Press Parts
- Designed For Easy Installation – Less Downtime
- Flywheel – Designed For Existing Motor & Belt Arrangement
- Drive Shaft Assembly – Press Specific
- Pinion & Bearing Assembly – Utilize Existing Parts
- Custom Bracketing – Use Existing Bolt Pattern on Press Crown

Press Pac® Testing:

Press Pac® Integral Clutch/Brake Drive and Circulating Oil System are fully assembled and tested at the factory before shipment. All operating parameters are checked to ensure they are within the specified requirements including; Vibration Analysis, Temperature, Run Out and Balancing.

- Proven
- Reliable
- Fully Tested

Press Pac® 2100 Specifications

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>CLUTCH TORQUE</th>
<th>BRAKE TORQUE</th>
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Press Pac® 1600 Series
Integral Mounted Press Drive Systems

The Press Pac® 1600 series provides all the same design, installation and operational performance of the Press Pac® 2100 series. However, this unit is pneumatically actuated and oil cooled. It is a proven product since 1968 that provides the high performance, quality and reliability that the Press Pac® is famous for. All components of the existing assembly are replaced except the pinion, bearing and bracket on the pinion side.

Press Pac® 1600 Series Features:

- Pneumatically Actuated / Oil Cooled
- Higher Single Stroke Capability
  - Increase Single Stroke up to 25% Without Gear Change
- Precise Inching & Jogging
- Reduced Life Cycle Costs
  - Up to 10 Years of High Volume Production
- Low Inertia – Compact Design
- Complete Drive System
Complete Package Includes The Following New Components:

- Complete Drive System Engineering
- Oil Shear Clutch/Brake
- Clutch/Brake Housing
- Flywheel
- Flywheel Bearings
- Drive Shaft
- Mounting Brackets
- Rotary Union
- Hydraulic Oil Tank
- Midwest Brake Service Technician Check Out

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### Press Pac® 1600 Series Specifications

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Press Pac® 2200 Series
Separate Clutch/Brake Mounted Units
Hydraulically Actuated/Oil Cooled

Separate mounted units are used when the clutch is mounted on one end of the drive shaft and the brake on the opposite end. The flywheel can be either quill mounted or drive shaft mounted. These units can be retrofitted to existing presses without ANY changes or modifications of existing press parts.

The response between clutch and brake either emulates a mechanically interlocked clutch and brake or has precisely controlled overlap between the clutch and brake on both starting and stopping.

Better inching/jogging is the prime advantage of slight overlap. The overlap is so small and so precisely controlled automatically that increased disc wear and heat are negligible.
Complete Package Includes The Following New Components:

- Complete Drive System Engineering
- Clutch Assembly
- Brake Assembly
- Clutch and Brake Hub
- Clutch and Brake Adapters
- Rotating Union
- Hydraulic Oil Tank
- Midwest Brake Service Technician Check Out

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>CLUTCH TORQUE</th>
<th>BRAKE TORQUE</th>
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Press Pac® 2232 Separate Clutch & Brake
Verson® 600 Ton Stamping Press Installation

Press Pac® 2297 Separate Clutch & Brake
Danly® 1600 Ton Double Action Stamping Press Installation

Press Pac® 2232 – Erfurt® 1250 Ton Stamping Press Installation
Press Pac® 2100 Series Quill Mounted Units Hydraulically Actuated/Oil Cooled

Quill mounted units are furnished primarily to press manufacturers for installation on new presses. These units closely integrate the oil shear clutch/brake with the flywheel, quill and drive shaft typically furnished by the press manufacturer. The design of these units are very similar to the integral mounted units. In fact, many of the parts are the same. The cooling oil that flows through the Press Pac® also lubricates the flywheel bearings and the outboard drive shaft bearing.

Midwest Brake gives the press manufacturer the option of purchasing the oil system from Midwest Brake or building their own using Midwest Brake supplied hydraulic schematics and specifications.

The quill mounted unit offers the press manufacturer the opportunity to provide their customers a cost effective, high performance oil shear clutch/brake on metal forming presses.

### Complete Package Includes The Following New Components:

- Complete Drive System Engineering
- Bell Housing
- Oil Shear Clutch and Brake
- Clutch Drive Ring
- Hydraulic Oil Tank
- Rotating Union
- Midwest Brake Service Technician Check Out

### Press Pac® Quill Mounted Specifications

<table>
<thead>
<tr>
<th>MODEL #</th>
<th>CLUTCH TORQUE</th>
<th>BRAKE TORQUE</th>
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<tr>
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<tr>
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<tr>
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</table>
We Also Offer The Following Press Drives

- Press Drives for Forging Presses
- Press Drives for Press Brakes
- Press Drives for Turret Punch Presses

Press Pac® Clutch/Brake Drive Systems
Oil Shear Drives For Metal Forming Equipment

Press Pac® 2222 Clutch
National® 500 Ton Forging Press Installation

Press Pac® 2222 Brake
National® 500 Ton Forging Press Installation

Press Pac® Brake Only Application
Ajax® 1300 Ton Forging Press Installation

Press Pac® 2222 Separate Clutch and Brake
National® 500 Ton Forging Press Installation

Hydraulic Clutch/Brake Conversion
250 Ton Press Brake Installation

Clutch/Brake Drive System for a Turret Punch Press
Press Pac® 3200 Series
Multiple Disc Clutch/Brake

The Press Pac® 3200 Series is a hydraulically actuated / oil cooled, multiple disc combination clutch/brake for metal stamping presses. This unit is designed for the customer that prefers to complete the press drive integration process themselves. This unit is ideally suited for the press manufacturer or the press rebuilder and will provide years of increased reliability, performance and uptime needed from an oil shear press drive.

Press Pac® 3200 Series Features:

• **Longer Clutch/Brake Life** – Due to High Cooling Capability
  - Circulating Oil System – Dissipates Heat & Cools Oil
  - Friction Discs – Continually Lubricated
  - Excellent Single Stroke Performance – Rapid Stroke Rate

• **Maintenance Free**
  - No Clutch/Brake Adjustment
  - Virtually No Friction Disc Wear
  - Eliminates Downtime

• **Excellent Start / Stop Capability**
  - Consistent Braking Angles +/- 1%
  - Controlled Accel / Decel Available

• **Smooth, Quiet Engagement**
  - Extends Life of Press Parts
  - Cushioned Engagement of Oil Shear
  - Noise Free
  - No Hazardous Dust Lining Exhausted Into Atmosphere

• **Compact Design**
  - Low Inertia
  - High Torque – Smaller Package

• **Mounted With Keys or Locking Assemblies**

• **Actuation Pressure of 800 PSI**
  - Higher Torque in Smaller Packages

Mounting Configurations Available:

• Shaft End Installation
• Between Flywheel and Press Frame
• Quill Mount – Rotating Housing
Press Pac® 3200 Specifications

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Standard Clutch Torque</th>
<th>Reinforced Clutch Torque</th>
<th>Standard Brake Torque</th>
<th>Reinforced Brake Torque</th>
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</table>

Additional Options Available:

- Rotary Union
- Hydraulic Oil Tank
- Midwest Brake Service Technician Check Out
Electro Shear® Motor Brake

The Electro Shear® motor brake is simply the best performing, most reliable brake in the industry. Electro Shear® brakes are spring set; released by 3 phase alternating current. The unit is self contained, totally enclosed and utilizes advanced composite oil shear friction technology.

Electro Shear® Brake – Operation

Electro Shear® brakes stop the machine load by the shearing of an oil film between the discs. RESULT - virtually no wear on the disc surfaces. An advanced composite facing material on a steel core is used on alternate discs. The other discs are steel. Multiple springs apply pressure against the disc stack to produce the stopping and holding torque.

3-Phase, alternating current is supplied to the brake coil at the same time it is supplied to the motor. The brake coil releases the spring pressure against the disc stack before the motor winding reaches saturation. RESULT - no overlap, no overheating of the motor or brake.

Electro Shear® Motor Brake Features:

- **AC Brake** – Spring set, electrically released, fail safe brake.
- **Oil Shear Brake** – Operates in a bath of hydraulic transmission fluid.
- **Oil Shear Principle** – Viscous shearing of the oil between the disc stack absorbs kinetic energy and dissipates heat.
- **Continuous Oil Flow** – Dissipates heat, keeps discs cool.
- **Totally Enclosed System** – Unit is self contained, impervious to outside contaminants, impervious to coolant and chips from machining.
- **Exceptionally Long Life** – Up to six times the life of dry friction disc brakes*
- **Simple Installation** – Unit mounts to the C-Face of motor. Mounts as one integral unit, no pieces.
- **Precise, Repeatable Stopping** – Cycle after cycle, year after year.
- **Inching & Jogging Capabilities** – Up to 120 cycles per minute.
- **No Adjustment Necessary** – Reduced maintenance costs.

Ultimate Simplicity

A.C. Coil Assembly
Cast Aluminum Housing
Viton Oil Seals
Blind or Thru Hub-Spline and Keyway Mounting
Application Rated Brake Disc Stack
Spring Set Actuator
Manual Release w/Auto Reset

Model 8725 – Standard Detroit Hoist** Application

The current to the motor and brake is interrupted at the same time for stopping. AGAIN - no overlap, no overheating of the motor or brake.

*Based on lab-life studies and satisfied customer reports

**The listed trademarks are registered or unregistered trademarks of their respective owners.
Simple Installation

Electro Shear® brakes install as a single integral unit allowing for quick installation, inspection and repair. The Electro Shear® brake is impervious to coolant, water or dirt which leads to longer friction disc life. The brake mounts on the rear C-flange of a standard NEMA motor. Simply connect the 3 leads to the AC power supply per the service manual directions and the brake is ready for operation.

Reduced Maintenance Cost

Electro Shear® brake technology has proven to last up to six times* longer than competing dry friction disc brakes. This is due to the continuous oil flow system which prevents overheating of the brake and premature disc wear.

Exceptionally Long Life

The inertia of the machine is stopped by the shearing of an oil film between the friction discs and the steel discs. These discs do not come in contact until 90% of the inertia is absorbed by the shearing of the oil molecules. This leads to exceedingly long disc life.

Static and dynamic torque are the same; due to advanced composite disc facings resulting in fast, smooth stops.

The oil shear principle allows the Electro Shear® brake to have up to six times the life of dry friction disc brakes*.
ELECTRO SHEAR® MOTOR BRAKES
OIL SHEAR BRAKES FOR OVERHEAD CRANE & HOIST APPLICATIONS

Current Retrofits & OEM Installations*:
- Detroit Hoist
- Electro Lift
- Whiting Crane
- R & M Crane
- Low Head Hoists
- Kone
- R & M Crane
- P & H Crane
- Yale
- Hepburg
- Michigan Crane
- Lesco
- Kranco
- Acco
- Jaso
- Zenar
- American Monorail
- Shepard Niles
- Shaw-Box Cranes
- Street Crane

Model 8725 Installed on a Standard Detroit Hoist® Application

Electro Shear® Model 8725 – 25 Ton Overhead Crane Installation

Electro Shear® Brake Foot Mounted Bracket

Standard Electro Shear® Crane Brake

Electro Shear® Model 8727 – Foot Mounted Bracket Installations
Model 8725 Installed on a Trolley Application

Model 8725 Installed on a Low Head* Overhead Crane Application

Model 8725 Installed on a R&M* Gearbox D-8 Type Application

Model 8727 – R&M* D-11 Installation

Model 8725 Installed on a Mono Rail Detroit Hoist* Application

Model 8727 Installed on Bridge Application

*The referenced trademarks are registered or unregistered trademarks of their respective owners. Midwest Brake is a registered trademark of Midwest Brake Corporation.
**ELECTRO SHEAR® MOTOR BRAKES**

**OIL SHEAR BRAKES FOR ELECTRIC MOTOR & MACHINE TOOL APPLICATIONS**

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**Automotive Transfer Line Applications:**

Automotive engine and transmission plants utilize mechanical feed drives, transfer drives and tap heads.

Midwest Brake® has standard retrofit designs for all major machine tool manufactures.

**Current Retrofits & OEM Installations**:  
- Lamb  
- Thyssen  
- Buhr  
- LaSalle  
- Gehring  
- Cross Huller  
- Kingsbury  
- Ingersoll  
- Fellows  
- R & B  
- Ex-Cell-O  
- Greenlee  
- Comau  
- Gidding & Lewis  
- Olofsson  

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**Model 8724 – Standard C-Face Motor Installation**

**Model 8725 – Thyssen* / Cross Huller* Installation**

**Model 8726 – Gehring* Honing Machine Installation**

**Model 8725 – Slide Adjustment Motor Installation**

**Model 8722 – Standard C-Face Motor Installation**

**Model 8725 – Buhr* Feed Drive Installation**

**Model 8729 Installed on an Automotive Body Lift Application**

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1.800.525.4503 • www.midwestbrake.com • 1.800.525.4503 • www.midwestbrake.com •
Model 8722 – Cement Block Machine Application

Model 8724 – Cross* Feed Drive Installation

Model 8725 – Cross* Feed Drive Installation

Model 8724 – Cross* Feed Drive Installation

Model 8766 – Lamb* Mechanical Feed Drive Installation

9800 Series Double “D” Flange Brake I.E.C. Motor on Tap Head Application

Model 8765 – Lamb* Mechanical Feed Drive Installations

Model 8766 – Lamb* Slide Installations (Generation One Brakes In Operation Since 1987)
Som Pac® Series Clutch/Brake Drives

Som-Pac® drives are completely assembled Clutch/Brake drive systems operating in a bath of oil within a rugged, sealed housing which is impervious to outside contaminants. These oil shear Clutch/Brake drives contain multiple plate disc packs that are immersed in oil. Torque is transmitted by the shearing of the oil across the disc providing cooling and lubrication to the disc surfaces. The result is no wear on the disc surfaces, superior heat transfer and long trouble free performance.

Som-Pac® Features:
- Fully Enclosed Clutch/Brake Drive System
- Continuous Oil Flow
- Clutch/Brake Mechanically Interlocked
- Air Engaged Clutch
- Spring Set Brake (In Standard Units)
- Brake Torque Can Be Adjusted Externally
- Easy Installation
- Reduced Maintenance Costs

Som-Pac® Applications Include:
- Conveyors
- Transfers
- Shuttles
- Machine Tools
- Index Tables
- Assembly Machines
- Turnovers
- Palletizing Machines
- Welding Machinery
- Electric Motor Manufacturing
- Coil Feeding Equipment
- Spinning Machinery
- Packaging Machinery
- Presses
- Grinding Machines
- Winding Equipment
- Cement Block Machines
- Testing Equipment
- Container & Drum Manufacturing
Mannesmann Demag™—Model KOS & KBOS

Mannesmann Demag™ manufactures a Microspeed 2 Speed Drive Unit model KOS and KBOS. Midwest Brake and Mannesmann Demag™ worked together to develop an oil shear clutch/brake for the Microspeed Drive Units. This clutch/brake is supplied on new drives as OEM equipment and as a retrofit package for existing units in the field.

The oil shear clutch/brake operates in a bath of hydraulic transmission fluid which lubricates the discs and dissipates heat. The shearing of oil between the clutch discs transmits the torque and heat. The friction discs experience little or no wear.

The oil shear clutch/brake can provide years of service with no wear, no adjustments and no maintenance. It is a totally enclosed and oil immersed package that makes it impervious to outside contaminants. Thus, airborne coolants and metal chips from the machining operation cannot affect the operation or life of the friction material. The heat transfer by the oil shear principle provides uniform operation and cycling from Monday morning to Friday afternoon.

Midwest Brake® Oil Shear Clutch Features:

• Eliminate “Monday Morning Syndrome”
• Oil Shear Brake – Results in longer life, better heat transfer
• No Adjustment
• Totally Enclosed Unit – System unaffected by environment
• No External Controls Required to Operate Brake
• No Overlap Between Clutch & Brake
• Full Braking Torque For Emergency Stops

Midwest Brake® Offers the Following Options for the Demag Product:

• Motor and Clutch Repair Services
• Conversion From Dry Clutch to Oil Shear Clutch
• Inspection and Service Technicians Available
• 1 Year Warranty
EATON® / AIRFLEX® CLUTCHES & BRAKES
AIRFLEX CLUTCHES & BRAKES FOR METAL WORKING EQUIPMENT

Authorized Distributor for Eaton® Airflex® Clutches & Brakes

CBC Clutch/Brake Combination Features:

• Compact Size
• High Thermal Capacity
• High Clutch & Brake Torque
• Low Maintenance
• Easy Installation
• Improved Safety Features

Other Eaton / Airflex Products Include:

• CB Clutches & Brakes
• VC Clutches & Brakes
• CS/CTE Brakes
• FSPA
• WCBD Dual Piston Brakes

Eaton / Airflex Products Can Be Used On:

• Mechanical Presses
• Press Brakes
• Shears
• Paper Converting Equipment
• Coil Processing Equipment
• Turret Presses
• Paper Machine Drives
• All Metalworking Equipment

Authorized Distributor for Eaton® Airflex® Clutches & Brakes

CB Clutches & Brakes
WCB Brakes
VC Clutches & Brakes
FSPA Clutches
Additional Options:

- Clutch Conversions
- Rebuilds
- Turnkey Installation
- Replacement Parts
- Stock Units
- Inspection Service
- Installation
Clutch/Brake Repair
Midwest Brake® offers complete clutch/brake repair and rebuilds on all style of mechanical clutches and brakes stamping and forging presses.

Wet Clutch Rebuilds
- Midwest Brake® - Press Pac®
- Komatsu* Wet Clutch

Dry/Pneumatic Clutch Rebuilds
- All Styles of Dry Clutch Rebuilds

We Can Supply Replacement Parts for Clutch/Brakes
We can inspect, disassemble, repair & rebuild all style of clutch/brake units for presses. We can machine & repair component parts, reline clutch/brake plates. We also provide field service engineers who can install and check out your system to insure that your newly rebuilt unit is operating properly.

* Free phone consultation support available.
Midwest Brake® Rebuilds All Styles Of Clutches & Brakes

Eaton® Airflex® 28 VC Clutch

Rebuilt Eaton® Airflex® 28 VC Clutch

Press Pac® 1642 Series in for Repair

Press Pac® 1642 Series Ready for Shipping

Dry Friction Brake in for Repair

Dry Friction Brake on Test Stand

*The referenced trademarks are registered trademarks of Eaton Corporation. Midwest Brake is a registered trademark of Midwest Brake Corporation.*
WE ALSO OFFER THE FOLLOWING PRODUCTS & SERVICES

MISCELLANEOUS PRODUCTS & SERVICES

Full Machining Services

Midwest Brake® provides a full machine shop to complement our unique products and services. Additionally, we can manufacture custom and production machined parts. We can provide the highest quality machining performance and controlled tolerances. Our services include:

- CNC Programmable Machines
- Hurco® Machining Centers
- Cincinnati® Lathes
- Vertical Turning Lathes
- Engine Lathes

Machining Drive Shaft to Midwest Specifications

Machining Friction Material on Clutch Plate to +/- .002 Parallel

Total Indicator Reading Inspection Performed On ALL Forging Plates

Machining Flywheel Belt Grooves to Midwest Brake® Specifications

Midwest Brake® – CNC Machining Equipment

Cincinnati® Turning Lathe With 146” Swing Machining 4000 Ton Clutch Disc to Proper Thickness for a National® Forging Press
Midwest Brake® Is Your One Source For Press Parts and Services

- Cast or Forged Parts Available
- Housings
- Weld Repair
- Spare Parts
- Rush Repair Service Available

Fabricated & Machined Parts

- Pressure Plates
- Brake Hubs
- Clutch Hubs
- New Parts Manufactured
- Reverse Engineering
- Quality Parts
- On Time Deliveries

CNC Machining of Brake Housing

Machining Clutch/Brake Plate to Midwest Specifications

CNC Machining Capabilities

National* 4000 Ton Clutch Hub Manufactured New

Brake Wheel For Forging Press Manufactured New